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10/671,837	09/29/2003	Guy G. Morneault	51995-7	3519

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EXAMINER	
CHORBAJI, MONZER R	

ART UNIT	PAPER NUMBER
1797	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/671,837	MORNEAULT ET AL.	
	Examiner	Art Unit	
	MONZER R. CHORBAJI	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,5-10 and 13-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-10 and 13-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Non- final action is in response to the amendment received on 4/30/07

Claim Objections

1. Claim 31 is objected to because of the following informalities: Newly added claim 31 is written as being dependent on claim 31. For purpose of this action, examiner evaluated claim 31 as being dependent on claim 30. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 9, 20, 23-24, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Arnott (U.S.P.N. 2,279,810).

Regarding claim 1, Arnott discloses an apparatus (radiation chamber as shown in figure 6) for decontaminating air within an enclosed workspace (air within rooms of a building as mentioned on page 1, left column, lines 1-12), the enclosed workspace (a room within a building) located downstream and in fluid communication with the apparatus (see the duct in figure 6 labeled as outgoing air), the apparatus comprising: a housing (unlabeled housing surrounding the UV lamps as shown in figure 6) containing an array of ultraviolet lamps (unlabeled UV lamps in figure 6) mounted within an

enclosure (unlabeled enclosed volume within housing) in the housing, the enclosure having an intake aperture (unlabeled aperture of incoming air duct as shown in figure 6) and an exhaust aperture (unlabeled aperture of outgoing air as shown in figure 6), the housing and the array forming an airflow processor (page one, left column, lines 3-5) such that uncontaminated air (page one, right column, lines 21-24) entering the intake aperture (see duct labeled incoming air as shown in figure 6) passes through the array before exiting the exhaust aperture (see unlabeled UV lamps in figure 6), the array of ultraviolet lamps including a plurality of stick lamps (see unlabeled UV lamps in figure 7), where at least some stick lamps are installed with their lower ends secured in a lamp rack assembly (unlabeled UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) and their upper ends installed in a frame such that the long axis of each of the at least some stick lamps extends vertically (unlabeled UV lamps in figure 7 vertically extends through the unlabeled height of the duct); an air flow motivator (Arnott on page 2, right column, lines 62-63, teaches that air has velocity moving within the duct system such that one would recognize that air conditioning systems have fans to move air through the duct system) urging airflow through the housing and the array from the intake aperture and out through the exhaust aperture; a downstream conduit in fluid communication between the exhaust aperture and the workplace (unlabeled conduit through which sterilized outgoing air travels through the duct system to various rooms within a building) for directing airflow into the workplace after being processed in the airflow processor, wherein the intake aperture (unlabeled aperture of duct having incoming air as shown in figure 6) is positionable relative to the workspace (a room in a

building as taught by Arnott on page one, left column, lines 3-5) so that airflow entering the intake aperture is uncontaminated air (page one, right column, lines 22-23).

Regarding claim 23, Arnott discloses an apparatus (radiation chamber as shown in figure 6) for decontaminating a flow of gas (air flowing within rooms of a building as mentioned on page 1, left column, lines 1-12), the apparatus comprising: a housing (unlabeled housing surrounding the UV lamps as shown in figure 6) including an enclosure (unlabeled enclosed volume within housing) with an intake aperture (unlabeled aperture of incoming air duct as shown in figure 6) and an exhaust aperture (unlabeled aperture of outgoing air as shown in figure 6); an array of ultraviolet lamps (unlabeled UV lamps in figure 6) mounted within the enclosure (unlabeled enclosed volume within housing), the array of ultraviolet lamps including a plurality of stick lamps, each stick lamp installed with its lower end secured (unlabeled UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) in a lamp rack assembly and its upper end installed in a frame such that the long axis of each stick lamp is vertically oriented (unlabeled UV lamps in figure 7 vertically extends through the unlabeled height of the duct, the housing and the array forming a gas flow processor (page one, left column, lines 3-5) such that a flow of gas entering the intake aperture passes through the array before exiting the exhaust aperture; and a gas flow motivator (Arnott on page 2, right column, lines 62-63, teaches that air has velocity moving within the duct system such that one would recognize that air conditioning systems have fans to move air through the duct system) urging the gas flow through the housing and the array from the intake aperture and out through the exhaust aperture.

Regarding claim 2, Arnott discloses that the apparatus further includes an intake conduit (conduit containing incoming air as shown in figure 6) having an upstream and exposed to ambient air (page one, right column, lines 20-23) external to the workspace and an opposite downstream end (conduit containing outgoing air as shown in figure 6) mounted to the intake aperture (both conduits are connected to each other) in fluid communication with the array (unlabeled UV lamps in figure 6).

Regarding claims 9 and 24, Arnott discloses that the airflow motivator is a fan (Arnott on page 2, right column, lines 62-63, teaches that air has velocity moving within the duct system such that one would recognize that air conditioning systems have fans to move air through the duct system).

Regarding claims 20 and 28, Arnott discloses that the frame (unlabeled frame in figure 7 having cover) includes apertures (unlabeled apertures through both ends of UV lamps are inserted into) through which the upper ends of the stick lamps extend.

4. Claims 13-15 and 17-18 are rejected under under 35 U.S.C. 102(e) as being anticipated by Soremark (U.S.P.N. 6,358,478).

Regarding claim 13, Soremark discloses a method of decontaminating air (col.1, lines 12-14) contained within an enclosed workspace (col.5, lines 39-41) comprising: generating hydroxyl radicals (col.4, lines 50-56) in an airflow of non-contaminated air (as air enters enclosure 1 in figure 1, it is decontaminated by being exposed to UV light as explained in col.5, lines 15-17 while hydroxyl radicals are generated in the decontaminated air with UV); and urging the airflow (figure 1:7) into the workspace after the generating of the hydroxyl radicals in the airflow (col.5, lines 24-35).

Regarding claim 14, Soremark discloses providing a housing (figure 1:1) containing UV lamps (col.5, lines 15-17) and motivating the airflow through the housing (figure 1:7) so as to generate hydroxyl radicals in the airflow (col.5, lines 23-27) as the airflow passes through the housing (figure 1:1).

Regarding claim 15, Soremark discloses that the housing (figure 1:1) includes multiple of lamps (col.5, lines 16-17 that is considered as an array) and further providing a downstream conduit (part of enclosure 1 after fan 7 in figure 1) in fluid communication between the housing (1) and the workspace (col.5, lines 39-42) and flowing the air flow downstream through the conduit (figure 1:7) so as to direct the airflow into the workspace.

Regarding claims 17-18, Soremark teaches urging the airflow (figure 1:7) into the workspace (col.5, lines 39-42) and that the enclosed workspace is odor containing (smoking rooms and toilets are odor containing enclosed spaces as described in col.5, line 42).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810).

Regarding claims 6-7, Arnott sterilizes air within ducts of an air conditioning system within a building (page 1, left column, lines 3-5). However, Arnott is silent as to having vertical ducts and rigid ducts. Such would appear to be conventional in any air conditioning system. One of ordinary skill in the art would readily recognize that conventional air handling systems (HVAC) include vertical and horizontal rigid ducts (such as main ducts) that connects across a certain floor or across floors in a building.

9. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soremark (U.S.P.N. 6,358,478).

Soremark teaches disinfecting air flowing within a building (col.5, lines 39-42) such that it would have been obvious to one of ordinary skill in the art that conventional building air handling systems where those systems are known to incorporate fresh ambient air (considered non-decontaminated) with recycled internal air.

10. Claims 5, 8, 41-48, 51, and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810) as applied to claims 1-2 and further in view of Crook (U.S.P.N. 6,354,937).

Regarding claim 41, Arnott discloses an apparatus (radiation chamber as shown in figure 6) for decontaminating a flow of gas the apparatus comprising: a housing (unlabeled housing surrounding the UV lamps as shown in figure 6) including an enclosure (unlabeled enclosed volume within housing) in the housing, the enclosure having an intake aperture (unlabeled aperture of incoming air duct as shown in figure 6) and an exhaust aperture (unlabeled aperture of outgoing air as shown in figure 6); an array of ultraviolet lamps (unlabeled UV lamps in figure 6) mounted within the enclosure (unlabeled enclosed volume within housing), the housing and the array forming an airflow processor (page one, left column, lines 3-5) such that uncontaminated air (page one, right column, lines 21-24) entering the intake aperture (see duct labeled incoming air as shown in figure 6) passes through the array before exiting the exhaust aperture (see unlabeled UV lamps in figure 6); and an inlet duct (duct having incoming air shown in figure 6) having an upstream end (Arnott sterilizes air within ducts of an air conditioning system within a building, page 1, left column, lines 3-5, such that one of ordinary skill in the art would readily recognize that conventional air handling systems

(HVAC) include upstream and downstream duct system) with an opening therein and an opposite downstream end mounted to the intake aperture, the duct being in fluid communication with the array (incoming duct that includes incoming air in figure 6 is in fluid communication with UV lamps). Arnott fails to teach a flexible conduit mounted to the exhaust aperture and downstream of the array to convey the flow of gas from the housing.

Crook teaches that HVAC includes flexible hoses (col.1, lines 6-8) in order to provide either straight or bent ducts (col.2, lines 3-6). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus in Arnott with flexible ducts, because they can provide either straight or bent ducts as explained by Crook (col.2, lines 3-6).

Regarding claims 5, 8, and 44, Arnott fails to teach the use of a flexible conduit. Crook teaches that HVAC includes flexible hoses (col.1, lines 6-8) in order to provide either straight or bent ducts (col.2, lines 3-6). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus in Arnott with flexible ducts, because they can provide either straight or bent ducts as explained by Crook (col.2, lines 3-6).

Regarding claims 42-43, Arnott sterilizes air within ducts of an air conditioning system within a building (page 1, left column, lines 3-5) such that one of ordinary skill in the art would readily recognize that conventional air handling systems (HVAC) include rigid inlet ducts that extends vertically or in various different orientations adjacent the housing where the opening is positioned above the housing.

Regarding claims 45-46, and 51, Arnott discloses an array of UV stick lamps (UV lamps in figure 6) such that the lamps are positioned with their long axis parallel to each other and their long axis are vertically oriented (see figure 7).

Regarding claims 47-48, Arnott on page 2, right column, lines 62-63, teaches that air has velocity moving within the duct system such that one would recognize that air conditioning systems have fans to move air through the duct system.

Regarding claims 53-54, Arnott discloses an array of ultraviolet lamps that includes a plurality of stick lamps (see unlabeled UV lamps in figure 7), where at least some stick lamps are installed with their lower ends secured in a lamp rack assembly (unlabeled UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) and their upper ends installed in a frame having apertures (see figure 7).

11. Claims 10, 21-22, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810) as applied to claims 1, 23, and further in view of Tabatabaie-Raissi et al (U.S.P.N. 5,842,110).

Regarding claims 10 and 25, Arnott fails to teach that the lamps are positioned in offset positions relative to one another. Tabatabaie-Raissi position UV lamps in offset positions (figure 2A:331-334) in order to maximize generation of the vapor-phase free radical oxidizing species and to minimize mass transfer effects (col.3, lines 52-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus in Arnott with UV lamps in an offset arrangement in order to maximize generation of the vapor-phase free radical oxidizing species and to minimize mass transfer effects as explained by Tabatabaie-Raissi (col.3, lines 52-55).

Regarding claims 21 and 26, Arnott discloses an array of vertical ultraviolet lamps that includes a plurality of stick lamps (see unlabeled UV lamps in figure 7), where at least some stick lamps are installed with their lower ends secured in a lamp rack assembly (unlabeled UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) and their upper ends installed in a frame having apertures (see figure 7).

Regarding claims 22 and 27, Arnott shows that each frame (each frame of UV lamps as shown in figure 6) is spaced apart.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Soremark (U.S.P.N. 6,358,478) as applied to claim 14 and further in view of Arnott (U.S.P.N. 2,279,810).

Soremark fails to teach that the UV lamps are stick lamps, each stick lamp installed with its lower end secured in a lamp rack assembly and its upper end installed in a frame such that the long axis of each stick lamp is vertically oriented. Arnott discloses an array of vertical ultraviolet lamps that includes a plurality of stick lamps (see unlabeled UV lamps in figure 7) in order to efficiently sterilize the air in conditioning ducts that is free of bacteria and other microorganisms carried thereby (page one, left column, lines 10-14). Furthermore, Arnott discloses that the stick lamps are installed with their lower ends secured in a lamp rack assembly (unlabeled UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) and their upper ends installed in a frame having apertures (see figure 7). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the method in Soremark

with the UV lamp arrangement) in order to efficiently sterilize the air in conditioning ducts that is free of bacteria and other microorganisms carried thereby as explained by Arnott (page one, left column, lines 10-14).

13. Claims 29-34, 37, and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810) as applied to claim 29 and further in view of Dall'Armi et al (U.S.P.N. 6,863,078).

Regarding claim 30, Arnott discloses an apparatus (radiation chamber as shown in figure 6) for decontaminating a flow of gas the apparatus comprising: a housing (unlabeled housing surrounding the UV lamps as shown in figure 6) including an enclosure (unlabeled enclosed volume within housing) having an intake aperture (unlabeled aperture of incoming air duct as shown in figure 6) and an exhaust aperture (unlabeled aperture of outgoing air as shown in figure 6); an array of ultraviolet lamps (unlabeled UV lamps in figure 6) mounted within the enclosure (unlabeled enclosed volume within housing), the housing and the array forming an airflow processor (page one, left column, lines 3-5) such that a flow of gas (page one, right column, lines 21-24) entering the intake aperture (see duct labeled incoming air as shown in figure 6) passes through the array before exiting the exhaust aperture (see unlabeled UV lamps in figure 6); and a gas flow motivator(Arnott on page 2, right column, lines 62-63, teaches that air has velocity moving within the duct system such that one would recognize that air conditioning systems have fans to move air through the duct system) urging the gas flow through the housing and the array from the intake aperture and out through the exhaust aperture. Arnott fails to teach the use of a lamp cleaning spray down system.

Dall'Armi discloses a UV lamp cleaning spray down system (figure 1:10, 75 and 35), because sleeves covering UV lamps are known to become fouled over time and they must be cleaned in order to optimize their performance (col.1, lines 39-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus in Arnott with the UV lamp cleaning device, because sleeves covering UV lamps are known to become fouled over time and they must be cleaned in order to optimize their performance as explained by Dall'Armi (col.1, lines 39-45).

Regarding claims 29 and 31, Arnott fails to teach the use of a lamp cleaning spray down system. Dall'Armi discloses an automated UV lamp cleaning spray down system (figure 1:10, 75 and 35 and col.4, lines 59-63), because sleeves covering UV lamps are known to become fouled over time and they must be cleaned in order to optimize their performance (col.1, lines 39-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the apparatus in Arnott with the UV lamp cleaning device, because sleeves covering UV lamps are known to become fouled over time and they must be cleaned in order to optimize their performance as explained by Dall'Armi (col.1, lines 39-45).

Regarding claims 32-34 and 37, Arnott discloses an array of UV stick lamps (UV lamps in figure 6) such that the lamps are positioned with their long axis parallel to each other and their long axis are vertically oriented (see figure 7), and that the gas flow motivator is a fan (Arnott on page 2, right column, lines 62-63, teaches that air has velocity moving within the duct system such that one would recognize that air conditioning systems have fans to move air through the duct system).

Regarding claims 39-40, Arnott discloses an array of vertical ultraviolet lamps that includes a plurality of stick lamps (see unlabeled UV lamps in figure 7), where at least some stick lamps are installed with their lower ends secured in a lamp rack assembly (unlabeled UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) and their upper ends installed in a frame having apertures (see figure 7).

14. Claims 35-36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810) in view of Dall'Armi et al (U.S.P.N. 6,863,078) as applied to claims 30, 37, and further in view of Tabatabaie-Raissi et al (U.S.P.N. 5,842,110).

Regarding claims 35 and 38, Arnott and Dall'Armi fail to teach that the lamps are positioned in offset positions relative to one another. Tabatabaie-Raissi position UV lamps in offset positions (figure 2A:331-334) in order to maximize generation of the vapor-phase free radical oxidizing species and to minimize mass transfer effects (col.3, lines 52-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the modified apparatus in Arnott/Dall'Armi with UV lamps in an offset arrangement in order to maximize generation of the vapor-phase free radical oxidizing species and to minimize mass transfer effects as explained by Tabatabaie-Raissi (col.3, lines 52-55).

Regarding claim 36, Arnott discloses an array of vertical ultraviolet lamps that includes a plurality of stick lamps (see unlabeled UV lamps in figure 7), where each stick lamp is installed with it's lower end secured in a lamp rack assembly (unlabeled

UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) and it's upper end installed in a frame having apertures (see figure 7).

15. Claims 49-50 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810) in view of Crook (U.S.P.N. 6,354,937) as applied to claims 41, 51, and further in view of Tabatabaie-Raissi et al (U.S.P.N. 5,842,110).

Regarding claims 49 and 52, Arnott and Crook fail to teach that the lamps are positioned in offset positions relative to one another. Tabatabaie-Raissi position UV lamps in offset positions (figure 2A:331-334) in order to maximize generation of the vapor-phase free radical oxidizing species and to minimize mass transfer effects (col.3, lines 52-55). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the modified apparatus in Arnott/Crook with UV lamps in an offset arrangement in order to maximize generation of the vapor-phase free radical oxidizing species and to minimize mass transfer effects as explained by Tabatabaie-Raissi (col.3, lines 52-55).

Regarding claim 50, Arnott discloses an array of vertical ultraviolet lamps that includes a plurality of stick lamps (see unlabeled UV lamps in figure 7), where each stick lamp is installed with it's lower end secured in a lamp rack assembly (unlabeled UV lamps in figure 7 have their ends secured in unlabeled rack having a cover) and it's upper end installed in a frame having apertures (see figure 7).

16. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810) in view of Crook (U.S.P.N. 6,354,937) as applied to claim 41 and further in view of Dall'Armi et al (U.S.P.N. 6,863,078).

Arnott and Crook fail to teach the use of a lamp cleaning spray down system. Dall'Armi discloses an automated UV lamp cleaning spray down system (figure 1:10, 75 and 35 and col.4, lines 59-63), because sleeves covering UV lamps are known to become fouled over time and they must be cleaned in order to optimize their performance (col.1, lines 39-45). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the modified apparatus in Arnott/Crook with the UV lamp cleaning device, because sleeves covering UV lamps are known to become fouled over time and they must be cleaned in order to optimize their performance as explained by Dall'Armi (col.1, lines 39-45).

Response to Arguments

17. Applicant's arguments with respect to claims 1-2, 5-10, and 13-55 have been considered but are moot in view of the new ground(s) of rejection. This action is made non-final in order to address the limitations of unamended claim 13.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MONZER R. CHORBAJI whose telephone number is (571)272-1271. The examiner can normally be reached on M-F 9:00-5:30.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. R. C./

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797